

## **Crowding the Rim Focus Group Outcomes**

### **(1) Potential Impacts of the Ripple Effect of Large Disasters:**

#### **Economic:**

- Shortages of food and other commodities, causing higher prices
- Damage to infrastructure (utilities, telecommunications) impacts the ability of businesses and communities to function
  - Blocked primary transportation routes and other type of transportation damage delay product shipments causing shortages and higher prices
  - Damage to vital infrastructure may cause businesses to fail or relocate to lower risk areas, causing a loss of jobs in the impacted area
  - Damage to oil refineries and our key parts of the energy sector can cause shortages and higher prices, causing inflation
- In countries where tourism is a significant contributor to the economy, disasters can have a drastic short-term impact on tourist dependant sectors of the economy (hotels, restaurants, theme parks, museums, airlines, etc.)
- In developing countries, damage to roads, bridges, power generation and distributions systems can be slow to recover, causing significant disruptions to the business, manufacturing and transportation dependent sectors
- Especially in developing counties, the cost of reconstruction can divert scarce resources away from other projects, slowing development of vital infrastructure, educational, medical care and housing programs, etc.
- Because of contemporary risk share structures in the insurance sector, a large disaster in one country can impose significant costs on insurance companies word-wide
- Economic interdependence of economies means that a large disaster in one country can have an impact on the economy of many other countries. If a disaster impacts a developing country that is a major supplier of a critical commodity, it can interrupt the supply chain to other countries. A major disaster in a developed country can cause an economic downturn that can reduce consumer demand and spending impacting the economy of their trading partners.
- Ecological damage can have a direct impact on tourism, fishing and other economic sectors
- Large disasters (especially in developing countries) can discourage foreign investment and motivate the best-educated members of the country to consider relocating to other countries to enhance both the economic opportunities and safety of their families.
- The small business sector often is the most vulnerable to large disasters, increased bankruptcies cause significant loss of jobs
- Reconstruction can increased economic activity is the construction, building materials and other related sectors

#### **Environmental:**

- Damage to the built environment can cause hazardous materials spills
- Earthquakes, hurricanes and other disasters can accelerate erosion, landslides and other damage to the environment

#### **Humanitarian:**

- Damage to medical facilities, water, sanitation systems and housing combined with the additional demand caused by disaster caused injuries can cause both direct impacts and make pre-existing medical issues worse by diverting resources
- Damage to housing stocks and loss of employment can cause homelessness and cause families to separate as working parents are forced to move to find employment while their spouse and children move in with family
- Large disasters in developing countries can create large-scale migration of refugees into neighboring countries, shifting the support requirements from one country to another.
- Disasters have a disproportionate impact on the economically disadvantaged, who often lack property or medical insurance, rent their homes, have fewer marketable skills and are least likely to have significant economic reserves.

### **Political:**

- Large disasters can cause weak governments to fall if they fail to rally support required to respond to the level of public expectations
- Disasters can help bring countries closer, helping them to overcome political disagreements (e.g. Greece & Turkey during 1999 earthquakes)
- The potential (both increased and decreased based on the situation) of armed regional conflict can be influenced by large disasters

### **(2) How do we better understand and quantify the potential impacts (listed in above)?**

- Need more real research and resulting data
- Need a global system to dynamically monitor disaster trends to better understand evolving issues, too often we do research and just assume the data is then eternal true, rather than part of an evolving phenomena
- Interpreting science for policy/decision makers
- Cross-disciplinary scientific study and information exchange
- Technology transfer and big-picture science integration

### **(3) Which categories of impacts, if any, should take priority?**

- Cultural/social losses

### **(4) What trends are feeding into our increasing vulnerability to disasters, including the Ripple Effect ?**

- Population growth, especially in developing countries
- Migration and concentration of population in large cities (urbanization) and on coastal areas, many of which are in especially disaster prone locations
- Increasingly interdependent economies (globalization)
- Increase in scope and distribution of sites where hazardous materials are utilized
- Just in time distribution strategies, reduce inventories and increase the vulnerability to supply chain disruptions
- Uneven distribution of wealth at both the individual and country level
- Increase potential for destructive weather driven by factors like global warming
- Globalization has dramatically shifting (lengthening) the distribution chains for many products, for example, the manufacturing, steel and other components of the heavy industrial sectors have increasingly shifted out of the U.S.

### **(5) What are the barriers to better understanding the Ripple Effect ?**

- Not enough detailed statistical information on disasters, including impacts and related drivers
- Convincing (educating) policy makers that action is needed
- The problem that solutions to vulnerability are best implemented at the local level, where the resources are often least available
- Need more research to understand the entire spectrum of issues that create disaster vulnerability

### **(6) What actions can be taken to reduce our regional vulnerabilities?**

- Reducing poverty also can reduce vulnerability to disasters, as resources facilitate better infrastructure, higher quality housing, etc.
- Infrastructure designed to withstand potential impacts of local hazards
- Better governmental systems for land use planning and building code enforcement
- Open, honest dialog between government and the public about risks, vulnerabilities, mitigation opportunities, response plans and capabilities
- More area specific hazard (like Hazpac) and impact information, that will support realistic public education, risk mitigation programs and response planning.
- Educate the public on disaster hazards, vulnerabilities, preparedness and mitigation strategies, so they are empowered to make informed decisions and apply pressure to governmental officials to appropriate decisions that reduce the vulnerabilities of their communities.
- More effective joint effort between government, science and the general public
- Better information (more research) on the hazards and potential impacts and potential economically feasible mitigation strategies
- Better system/capability to monitor the big picture globally to understand the emerging risks and driving forces for that increased risk
- Educate political decision makers, so they are more aware of both the short and long-term impacts/risks created by our rising vulnerability to disasters
- Clarify and coordinate the messages that emergency management, scientific and academic agencies and organizations are sending to our political leaders, so they receive a consistent message about risks and mitigating actions that need to be taken
- Work with insurance and financial institutions, like IMF & World Bank to develop preventive consortiums
- Improve (make them easier to use and more comprehensive) the quality of tools, like modeling programs, that we give to our decision-makers to better support their ability to decide what to do.
- We need to better understand the link between vulnerability and breakdowns in our social processes
- We need to find a new way to frame the issues, so that reducing disaster vulnerability is not always competing with other social priorities for attention and funding. Through education and the inclusion of appropriate disaster resistant designs as a basic part of the development process.